A study in word recognition skills in grade one

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A Study in Word Recognition Skills in Grade One

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Study in Word Recognition Skills in Grade One

Introduction

Reading occupies the position of fundamental importance in the elementary school. Gates[1] maintains that failure in reading is the cause of approximately ninety percent of the failures in the first grade. O'Brien[2], too, stresses the importance of a mastery of reading. Since reading is the basal subject in the elementary school, it follows that if the child's interpretation of the printed symbols is imperfect, the approach to the other subjects in the elementary curriculum will be made very difficult.

Traditionally, the first grade has been selected as the place for reading to begin, but, during the past few years the validity of this selection has been rightfully questioned. Many authorities in reading have interested themselves in reading readiness, and have made studies to obtain information that would aid them to determine the actual readiness of the child to read, before he is introduced to reading.

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1. Gates, A. I. "New Ways of Teaching Reading"
   Parents Magazine Vol. 6 April 1931
   Pages 18-20

2. O'Brien, J. A. "Reading, Its Psychology and Pedagogy"
   Century Company - 1926

Reed[3] maintains that, practically, reading may be introduced in the kindergarten, first grade or second grade, the criterion for placement being readiness to read, that is, the social, physical, intellectual, emotional, and mental readiness of the child to read. Berry[4], in an effort to obtain a measure of the child's readiness to begin reading, has devised the Baltimore Reading Readiness Test. This test consists of a word discrimination test which aims to measure the child's ability to find likenesses and differences in printed words, thereby presenting a reading maturity for beginning reading; and a Picture Vocabulary Test to determine to what extent the child has concepts by frequently recurring words. Although the predictive value of this test has not been definitely determined, Berry declares that it has a correlation coefficient of .79 with the Detroit First Grade Intelligence Test.

An experiment carried on at the Edgewood School, a progressive school in Greenwich, Connecticut, seemed to show that there was an advantage in delaying formal work in reading even to the age of eight. Langley[5], believes that child of seven or eight who has not had formal work in reading, "but,

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3. Reed, Mary M. Contribution to Ed. No. 290
"An Investigation of Practices in First Grade Admission and Promotion" Columbia

4. Berry, Frances M. "Baltimore Reading Readiness Test
Childhood Education Vol. 31 - Jan. 1927
Pages 22-30

5. Langley, Elizabeth "When Shall We Learn to Read?"
Child Study Vol. 8 - Jan. 1931
Pages 135-137

who has had imaginative and constructive play activities, has been educated in a sounder and more forward looking manner than a child who has had two years of formal work in reading." She maintains that there is an advantage in delaying formal reading work until the child has a rich background of experience, and a degree of maturity.

Among other studies in reading readiness are those by Deputy,[6] who worked out a series of reading readiness tests, and one by Holmes.[7] Holmes describes an investigation carried out by the International Kindergarten Union, on reading readiness. An analysis of five hundred sixty replies to the question, "On what evidence did children show that they were not ready to be taught?" revealed that in the opinion of representative teachers throughout the country, lack of mental efficiency and maturity are considered the most important factors. Lack of interest proved to be the next factor, followed by lack of experience.

Clark and Shank[8] after making a study of first grade failure concluded that:

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6. Deputy, Erby C. "Predicting First Grade Reading Achievement" Contribution to Ed. No. 426

7. Holmes, M. C. "An Investigation of Reading Readiness of First Grade Entrants" Childhood Education 3:1927 Pages 13-20

8. Clark, Hazel Shank, Spencer "Supervising a Reading Readiness Program" Dept. of Elementary School Principals Vol 10: 460-475 April 1931

a. Children learned to read more quickly when reading was taught as a thought-getting----thought giving process.

b. Children ready to read succeeded, regardless of method.

c. Children not ready to read, failed to do so, regardless of method, so failure of first grade children is not caused by method.

Therefore, there appears to be a general agreement that mature mental age is valuable as a criterion of success, and that the minimum entrance requirement should be made a mental age of six years. It is thought that if it were possible in the public school system, to defer reading until the child reached this mental maturity, the possibility of failure would be greatly decreased, and the efficiency increased. Storer[9] has concluded that the best way of meeting this problem lies in the "reorganization of the curriculum to provide for individual differences, and use of tests to determine those differences, especially in the field of reading readiness."

Since, at this time, reading is almost universally begun in the first grade, regardless of mental maturity, it is necessary to discuss some of the objectives set up in reading for this grade. Several broad general objectives have been set up in the Twenty-fourth Yearbook[10] as desirable levels of attainment. A list of more specific objectives

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9. Storer, Elizabeth W. "A Study of Tests for Prediction of Reading Success and Reading Failure on Primary Level" Unpub. Masters thesis - B. U. 1931

10. Twenty-fourth Yearbook National Society Study of Education Part I Pages 44-50

have been recommended by Storm and Smith.[11] These objectives follow:

a. To stimulate keen interest in reading and a desire to read independently.

b. To secure new, vicarious experiences in reading.

c. To introduce pupils to the thought-getting process and develop the ability to read independently and intelligently, such simple passages as are found in first grade readers.

d. To associate meaning with written or printed symbols.

e. To develop thoughtful reading attitudes.

f. To secure a wide span of recognition with regular forward movement and accurate return sweeps of the eye.

g. To develop reasonable speed in reading.

h. To gain in accuracy as well as in speed.

i. To gain independence in word recognition.

j. To enlarge the reading vocabulary.

k. To make reading but a growth and a part of every activity carried on in the school room.

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11. Storm, Grace E.
Smith, Nila B. Reading Activities in Primary Grades
Ginn 1930

Thus, an important responsibility rests upon the teacher of beginning reading. In order to determine with what efficiency the young child is reading, and at the same time to recognize for remedial treatment any detrimental habit that he may be forming, testing is necessary and valuable during the reading work of the first year. The testing program must be carefully handled, and never be allowed to inhibit a child's desire to read. If skillfully undertaken, testing will reveal the limitations of the child to the teacher. Testing will be valuable, of course, only when it is followed by an adjustment of teaching to test findings.

Since this study aims to deal with word recognition skills in the first grade, it is necessary to comment upon the better known standardized first grade tests. Gates has constructed the Gates Primary Word Recognition Test and has succeeded in overcoming the objection that children's vocabularies are largely limited to the words that have been taught in their particular reading system, by basing his test on the Gates Reading Vocabulary for Primary Grades.[12]

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12. Gates, Arthur I. "A Reading Vocabulary for Primary Grades" Bureau of Publications Columbia Univ. 1926

(This vocabulary is made up of 1500 words selected from the 2,500 words of highest frequency in the Teachers Word Book,[13] from the most frequent words in children's literature, and from the vocabularies of young children. The words were appraised on certain valuable criteria,[14] and the final 1500 selected were divided into twenty-four separate alphabetic lists, in three lists of 500 words each, the words being classified into eight parts of speech.)

The Gates Word Recognition Test is "designed to sample the pupil's ability to read words representative of the primary vocabulary." The test consists of a series of pictures, each with four words, one of which is descriptive of , or related to the picture. The child is directed to encircle the correct word. The test is provided in two forms each containing forty-eight exercises. The first exercises are made up of easy words, those of highest rank in the Reading Vocabulary,[15] grouped with three other words similar in some detail or in general shape. The words progress in difficulty and are presented with words more similar in detail and general configuration. A table showing raw score with corresponding reading grade and reading age has been evolved by Gates.

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13. Teachers Word Book E. L. Thorndike - Bureau of Pub. Columbia - 1928

14. Gates, A. I. Manual of Directions for Gates Primary Reading Tests Bureau of Pub. - Columbia

15. op. cit.

The main weakness of the test, it is believed, lies in the fact that Gates has attacked the word recognition problem in a reversed manner. Gates has provided four words with one picture with the result that the child studies the picture first and then recognizes the word.

The Detroit Word Recognition Test[16] has attacked the problem in exactly the opposite manner. In other words, the approach is more direct. The test consists of forty words or phrases with corresponding pictures. The child first reads a word or phrase, and then finds a picture to match it, drawing a line from the word or phrase to the correct picture. This test, too, overcomes the limited vocabulary objection, for the words have been selected not only from Thorndike,[17] but also from a study of the vocabularies of ten first readers used in Detroit. Therefore, Oglesby has presented words that are common in children's books, and no words are included that are "unessential to the reading vocabularies of elementary school pupils."

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16. Eliza F. Oglesby "Construction of Detroit Word Recognition Test" Journal Educational Research Vol. 11 - June 1924 - Pages 29-41

17. op. cit.

Oglesby[18] maintains that the Detroit Word Recognition Test may be used profitably in conjunction with one or more mental tests as a basis for classifying first or second grade pupils for work in reading. Oglesby found a correlation coefficient of .74 between scores and teachers' estimates of pupil's ability, showing, therefore, that the test measures very much the same ability that teachers have in mind as ability in word recognition.

The Gates Graded Word Pronunciation Test[19] is another test of importance in the field of first grade testing. This test is an individual test consisting of one hundred isolated words increasing in difficulty. Therefore, since the words are isolated, the possibility of deriving the recognition from the context is eliminated, and the tester is given an opportunity, by noting the oral replies of the child, to detect the types of attack used. The tester may record the child's response in a manner that will enable him to indicate a phonetic attack, a letter by letter attack, or a whole word method. It is believed that the main weakness of this test lies in its insensitivity. That is, Gates has provided only one hundred words for eight grades. From a study of the norms set up by Gates for this test, it is noted that even the difference of recognition of one word makes a difference of ten points on certain levels of the grade score. In the lower grades a sensitive test is needed to show the increment of growth of even a few months.

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18. op. cit.

19. Gates, A. I. "Construction of Graded Word Pronunciation Test" Teachers College Record 1924 - Pages 205-220

The Pressey Vocabulary Test[20], too, is well known in the testing of first grade word recognition. This test differs greatly from the tests commented upon heretofore. Primarily, the test consists of a series of lines each containing one real word and four nonsense syllables, for instance,

"tl	mz	the	unf	pr
wb	i	su	en	w
ol	buq	bl	lz	be
see	elx	brm	ts	osn
nad	es	id	and	ev"

The child is required to underline the real word in each line. A possible criticism of this test is that it is confusing to children.

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20. Hines, H. C. "A Guide to Educational Measurements"
Houghton Mifflin Co. - 1924
Page 160

One fundamental ability which all pupils must develop in learning to read is word recognition. The problem, then, of the first two grades is to help pupils to attach meanings to printed symbols, and to associate the familiar oral form of words with the new visual form. Word recognition is extremely important because the pupil's reading rate and comprehension are really determined by his ability to recognize words. Patterson[21] concludes that word recognition is largely responsible for rate in reading, and has much to do with improving comprehension "since it tends to release attention for larger thought wholes."

After a study of the word recognition tests and word pronunciation tests now commonly used in the first grade, one has noted the apparent failure of these tests to give a picture of the child's word recognition ability in detail. In the Gates Graded Word Pronunciation Test only one hundred words are offered for eight grades. It follows, then, that with such a limited number of words the test is very insensitive. It has been noted before, that on certain levels the recognition of one word, more or less, means a difference of ten points in Grade Score.

Recognizing the need for a test that would show a large increment of growth in short periods of time, this study has been undertaken with the aim of constructing and establishing tentative norms on a word recognition test.

The purposes of minor research allied with the main study

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21. Patterson, S. W. "Teaching the Child to Read" Doubleday Doran - 1930

were, to determine the relation, if any, between mental age and word recognition ability; to present material showing the difference between the sexes in this skill; and to learn from the results of the test at the third month, the possibility of determining a child's decile position in the test at the sixth month.

Chapter II

Plan and Conduct of the Experiment

Plan and Conduct of the Experiment

It was planned to carry on this study in word recognition throughout the year, testing the first grade children at three intervals, the first test in December after three months of school, the second test in March after the sixth month in school, and the third test to occur in June after nine months of reading. (Only the first two measures shall appear in this study. The third measure will appear later as a supplement.)

The test consisted of seventy-five words selected at random from the first five hundred words in the Gates Vocabulary.[22] Before selecting the words, a study was made also of the Wheeler-Howell Vocabulary Study[23] in order to determine the relative placement of words on both lists. A trial test by the author proved that a list of one hundred words was too difficult for children at this early stage in the first grade. So, twenty-five words were eliminated and the first test consisted of seventy-five words in estimated approximate order of difficulty.

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22. op. cit.

23. Wheeler, H. E.
Howell, E. "First Grade Vocabulary Study" Elementary School Journal Vol. 31:52-60 - Sept. 1930

The second test, or the test given at the sixth month, presented the seventy-five words already given, plus fifty new words of greater difficulty selected from the second five hundred words in the Gates Vocabulary for Primary Grades, making a total of one hundred twenty-five words.

Before presenting the second test to the first grade pupils, an experimental test consisting of the twenty-five most difficult words (as determined by the results of the first test), plus seventy-five new words selected from the second five hundred in Gates, was presented to fifty representative second grade children. This test was carried out in order to test the difficulty of the new words and determine their applicability to the higher level of the first test.

Summarizing, then, the first test, in the third month, consisted of seventy-five words selected from the first five hundred of the Gates list; and the second test, in the sixth month, consisted of one hundred twenty-five words, containing the seventy-five words already given in the test of the third month plus fifty new, more difficult words.

The first test, that of the third month, was presented to three hundred eighty-nine first grade children through the cooperation of the Belmont and Newton School systems. The second test was presented to three hundred sixty-nine children of the original group (absences and other uncontrolled circumstances caused a loss of twenty cases.) Among children tested were representatives from the Aldine, Gates-Huber, and Pennell-Cusack reading methods.

The word recognition test was given to each child individually. The test words were printed in lower case letters, large print, on three by five cards. Each card was exposed to the child for approximately ten seconds. A separate record blank was maintained for each child tested.

The following system was devised for recording the score: If a child recognized a word immediately that word was scored "plus"; if he immediately refused the word, it was scored "minus": if the word was studied before the correct response was given, the word was scored "S plus"; if the word was studied before refusal, it was scored "S minus". The child's score was the number of words recognized regardless of study before recognition, highest possible score for the test in the third month being seventy-five, and for the test in the sixth month, one hundred twenty-five. From a psychological viewpoint, it was deemed wise for the child to complete each test with a group of words of which there was practical certainty of immediate recognition. This was easily carried out by an appropriate arrangement of the test cards.

In each instance the child's individual response was recorded in order that at a later date a study and analysis might be made of the responses, to classify errors etc. It would be interesting in carrying on a study of this kind to show, perhaps, confusions of whole words which have similarities in initial, middle, or final letters, or in

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general outline, with the aim of aiding to solve the problem proposed by Gates and Boeker.[24] "What kinds of words and what forms of word treatment will insure the most expeditious and certain development of effective habits of word perception?"

A record blank showing the method of scoring appears on the following page.

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24. Gates A. I.
Boeker, Eloise — A Study of Initial Stages in Reading by Pre-School Children
Teachers College Record
Vol. 24: 469-488
Nov. 1923

Record Sheet of Test at Sixth Month

PRIMARY WORD RECOGNITION TEST #2

Name- Jane Smith Date- March 17, 32 Score 64

School- 3

I	+	door	+	fish	+
to	+	one	+	rain	+
jump	+	this	+	fat	S, fain
run	+	make	+	white	–
little	+	love	S, Live	cold	+
girl	+	bed	Red	cry	+
see	+	good	–	cut	–
cat	+	father	+	blow	+
play	+	look	+	barn	S, Bar
tree	+	morning	+	chicken	children
go	+	happy	+	well	will
the	+	horn	horse	wag	–
in	+	around	S-	pin	+
is	+	rose	–	sand	said
come	+	man	+	lost	–
me	+	eat	+	sister	–
it	+	time	+	cover	–
dog	+	was	saw	alone	–
children	+	under	+	himself	–
boy	+	sleep	sheep	breakfast	+
are	+	clock	S-	orange	+
red	+	before	S-	pat	+
yellow	+	people	S-	please	S-
day	+	gun	–	river	–
for	+	live	have	balloon	S-
he	+	out	–	animal	–
away	+	catch	–	lamb	–
you	+	seen	S, said	first	–
ball	+	say	–	pen	pain
house	S+	top	+	talk	take
big	Pig	king	–	frog	figs
pig	BIG	table	–	block	Black
like	+	went	–	place	plack
baby	–	chair	–	dark	dack
milk	S-	hole	–	sail	–
we	–	hop	+	bark	–
she	+	papa	–	skip	– sky
mother	+	call	+	picture	S-
sun	+	asleep	+	tall	+
all	+	name	made	quick	S, queen
has	+	back	+	shut	–
do	+	other	S, others		

Chapter III

Statistical Analysis of Data

The Final Order of Test Words

The following table presents the words of the test in order of their difficulty as determined by checking the frequency of correct responses to each word among three hundred sixty-nine children in the sixth month of the first grade.

Table I

Test Words and Frequency of Correct Responses

to	362	good	225	back	99
boy	359	this	223	orange	98
I	354	do	222	chair	95
tree	350	bed	220	skip	94
girl	348	sun	205	blow	94
play	347	eat	203	picture	89
the	347	like	199	pin	88
dog	345	man	196	name	88
in	344	morning	195	catch	86
little	341	rain	186	lost	85
run	337	door	183	cut	85
go	334	happy	182	pat	84
come	331	around	179	shut	84
see	324	was	172	tall	83
jump	319	has	170	breakfast	79
mother	317	live	166	pen	73
children	315	white	159	wag	72
cat	315	cold	151	cover	72
are	308	hop	148	please	71
me	308	cry	144	lamb	70
is	305	call	144	sand	66
away	305	seen	141	clock	64
baby	297	sleep	140	hole	63
it	296	under	136	frog	62
father	290	fat	135	dark	56
pig	288	barn	134	rose	53
ball	286	balloon	133	well	52
look	282	out	131	talk	51
he	273	love	130	sail	45
one	273	went	128	papa	44
you	272	chicken	127	river	43
milk	267	fish	123	himself	43
make	263	table	123	animal	42
day	263	top	122	before	42
we	257	other	121	bark	40
red	256	king	119	first	33
house	254	gun	118	place	29
she	254	time	104	block	29
yellow	252	sister	103	people	25
big	244	say	102	quick	24
for	242	horn	100	alone	16
all	234	asleep	100		

Analysis of the Testing at the End of the Third Month

The first seventy-five words were presented at the end of the third month of the first grade. The following table shows the results of testing three hundred eighty-nine children at this time.

Table II

Number of Correct Responses on the Word Recognition test of 389 Children at the End of the Third Month of the First Grade

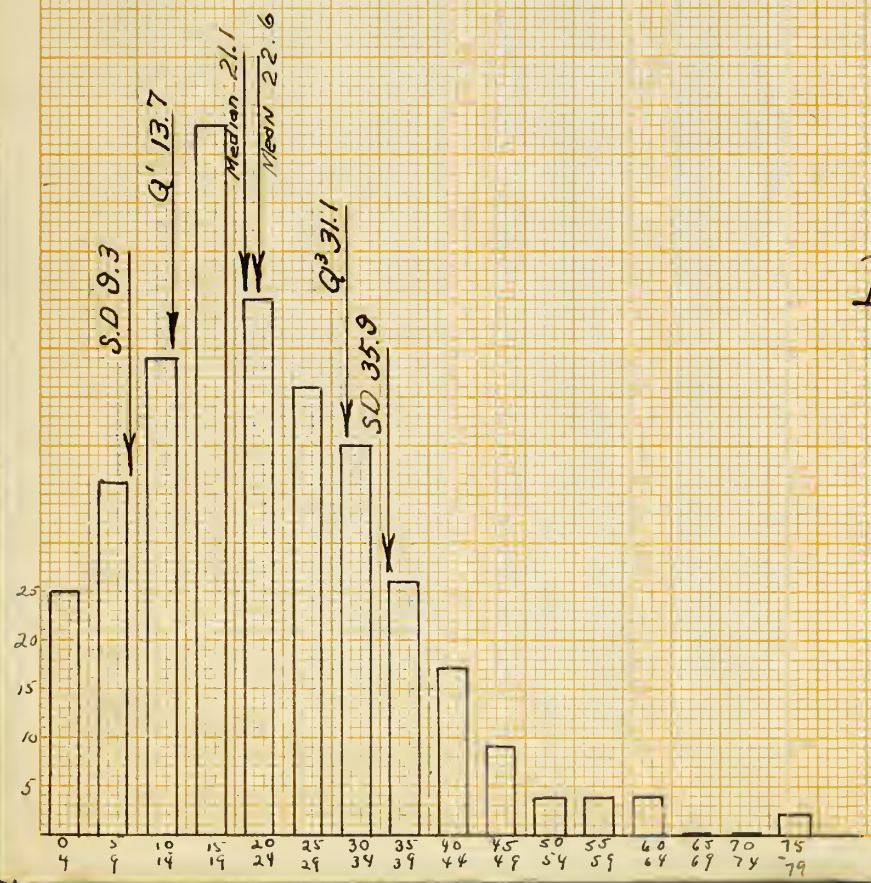
Median	Q1	Q3
21.1	13.7	31.1

A further analysis of the distribution of scores may be found in the table below, and in the graph which follows it.

Table III

Distribution of the Scores of 389 First Grade Children on the Word Recognition Test at the end of the Third Month

Score	Frequency
75-79	2
70-74	0
65-69	0
60-64	4
55-59	4
50-54	4
45-49	8
40-44	17
35-39	26
30-34	40
25-29	46
20-24	55
15-19	73
10-14	48
5-9	36
0-4	25
	N. 389
Mean 22.6	S. D. 13.3



GRAPH 1

Distribution of scores in word recognition test of 389 First Grade Children AT End of THird MONTH

From a study of the graph, one first notes the comparative normality of the curve making clear the rather even distribution of scores of the test of seventy-five words at this stage in the first year of reading. The median score falls at 21.1, and the mean falls at 22.6. In determining the variability of the scores the standard deviation and quartile deviation have been computed. Sigma, or the standard deviation equalled 13.30. Therefore, 68.26% of the total number of cases fell between points 9.3 and 35.9. It was determined that the first quarter point fell at 13.7, and the third quarter point fell at 31.1, the unit of absolute variability equalling 8.2. Therefore, the middle fifty percent of the cases fell between points 31.1 and 13.7. The graph shows that the variability is not great, the scores on the whole being fairly well concentrated.

Table IV

Analysis of the Results of the Third Month Test

by Individual Schools

School	Number of Pupils	Median Score
No. 1	54	26.
Aldine Method	31 girls	24.5
	23 boys	32.5
No. 2	65	19.1
Aldine Method	36 girls	23.5
	29 boys	18.3
No. 3	35	25.5
Gates Huber	18 girls	31.
	17 boys	19.7
No. 4	103	20.1
Aldine	44 girls	20.6
	59 boys	18.8
No. 5	70	28.5
Aldine and	42 girls	29.5
Pennell Cusack	28 boys	27.
No. 6	62	14.25
Pennell Cusack	36 girls	14.5
	26 boys	14.5
	Total 389	Total 21.1
	200 girls	22.3
	189 boys	19.9

Analysis of the Testing at the Sixth Month

One hundred twenty-five words were presented during the sixth month of the first grade. The following table shows the result of testing three hundred sixty-nine children.

Table V

Number of Correct Responses on the Word Recognition test of 369 Children at the End of the Sixth Month of the First Grade

Median	Q1	Q3
52.9	36.7	75.6

A further analysis of the distribution of scores may be found in the table below, and in the graph which follows it.

Table VI

Distribution of the Scores of 369 First Grade Children on the Word Recognition Test at the end of the Sixth Month

Score	Frequency
120-124	4
115-119	4
110-114	4
105-109	5
100-104	5
95-99	10
90-94	10
85-89	12
80-84	17
75-79	24
70-74	11
65-69	27
60-64	19
55-59	20
50-54	31
45-49	26
40-44	20
35-39	29
30-35	14
25-29	18
20-24	18
15-19	7
10-14	11
5-9	16
0-4	7
	N = 369

Mean 56.7 S. D. 28.0

Graph 2

Distribution of Scores in Word recognition test of 369 First Grade Children at End of Sixth Month

A Study of the Graph of the Test in the Sixth Month

A study of the graph of the scores in the test of the sixth month reveals, naturally, a much greater variability of scores than does the graph of the test in the third month. The standard deviation of this measure showed that 68.26% of the total number of cases fell between points 28.7 and 84.7. The interquartile range was computed for this measure also, and showed that the middle fifty percent of the cases fell between points 36.7 and 75.6. The distribution of this graph too, is normal.

There follows here a table showing the individual results of the schools tested in the sixth month of school:

Table VII

School	Number of Pupils	Median
1 Aldine	58	57.5
	31 girls	65.7
	27 boys	52.7
2 Aldine	62	46.
	29 girls	54.75
	33 boys	44.5
3 Gates	31	60.5
	17 girls	67.5
	14 boys	45.5
4. Aldine	97	43
	44 girls	46
	53 boys	40.7
5 Aldine and Pennell Cusack	69	62.
	40 girls	64.
	29 boys	53.
6 Pennell Cusack	52	58.
	30 girls	67.5
	22 boys	51.
Total	369	52.9
	191 girls	59.8
	178 boys	46.6

Table VIII

Comparison of Third Month Scores and Sixth Month Scores by Individual Schools

School	Median Third Month	Median Sixth Month	Gain
1. Aldine	26.	57.5	31.5
2. Aldine	19.1	46.	26.9
3. Gates	25.5	60.5	35.5
4. Aldine	20.1	43.	22.9
5. Aldine and Pennell Cusack	28.5	62.	33.5
6. Pennell-Cusack	14.2	58.	44.3
Total	21.1	[illegible]	31.8

It is of importance, here, to study the correlation between scores of the test in the third and in the sixth month, in order to determine the possibility of determining a child's decile position in the test at the sixth month, from his decile position in the test of the third month.

A graphic representation of this relation between scores on the test at these two intervals is shown on the following pages.

Test in Third Month: Decile	Score	Test in Sixth Month: 1 (0-19)	2 (20-29)	3 (30-38)	4 (39-46)	5 (47-53)	6 (54-62)	7 (63-71)	8 (72-80)	9 (81-92)	10 (93-125)
10	40-75					1	2	1	6	11	11
9	33-39				1	4	2	4	10	8	4
8	29-32				1	2	6	9	3	7	9
7	25-28			2	4	3	7	6	3	1	3
6	21-24		2	4	10	8	7	4	1	1	1
5	18-20		2	5	3	6	3	4	3	1	1
4	15-17		7	9	5	7	3	2	2	2	1
3	12-14	1	3	9	8	2	2	3	2		
2	7-11	9	12	4	2	3	3				
1	0-6	22	6	2		1					

N = 329
r = .78

Table IX

Correlation of Scores in Third and Sixth Months

This table shows the correlation of scores between the test at the third month and the test at the sixth month.

The table is read in the following manner: of those children whose rank in the test of the third month fell in the first decile, containing scores (0-6), twenty-two maintain a similar position in the test at the sixth month, six have advanced to the second decile, two to the third, and one to the fifth.

One would judge from the table that the degree of correlation is moderate. The coefficient of correlation determined by the Pearson Product Moment formula proved to be .78±.02 substantiating the conclusion of moderate correlation.

It is concluded, then, that since the degree of correlation is but moderate, a child's decile position in the test of the sixth month cannot be predicted with certainty from his decile position in the test of the third month.

Test in Sixth month

Test in third month	Score	Decile 1 (0-19)	2 (20-29)	3 (30-38)	4 (39-46)	5 (47-53)	6 (54-62)	7 (63-71)	8 (72-80)	9 (81-92)	10 (93-125)
10	40-75					3	6	3	19	34	34
9	33-39				3	12	6	12	30	24	12
8	29-32				3	5	16	24	8	19	24
7	25-28			7	14	10	24	21	10	3	10
6	21-24		5	10	26	21	18	11	3	3	3
5	18-20		7	18	11	21	11	14	11	3	3
4	15-17		18	24	13	18	8	5	5	5	3
3	12-14	3	10	30	26	7	7	10	7		
2	7-11	27	36	12	6	9	9				
1	0-6	72	19	6		3					

N=329

Table X

Correlation between Scores of test at Third and Sixth Months Interpreted in Percent

This table shows the same material that is presented in the preceding table, interpreted in percent.

In a study of the first decile, one notes that 72% of those who were in the first decile of the test at the third month, maintain a corresponding position in the test at the sixth month; nineteen percent have advanced to the second decile in the measure at the sixth month, six percent to the third decile, and three percent to the fifth decile.

A rather wide range of scores are shown in each decile.

Sex Differences in Word Recognition Skills

The tables below present the differences in word recognition achievement of the boys on this test as compared to the achievement of the girls.

Table XI

Difference at End of the Third Month

	Number	Mean	$P.E._m$	$Diff_m$	$P.E._{diff}$	$\frac{Diff}{P.E._{diff}}$
Girls	200	23.52	.6702	2.16	2.92	2.4
Boys	189	21.36	.6430			

Table XII

Differences at End of the Sixth Month

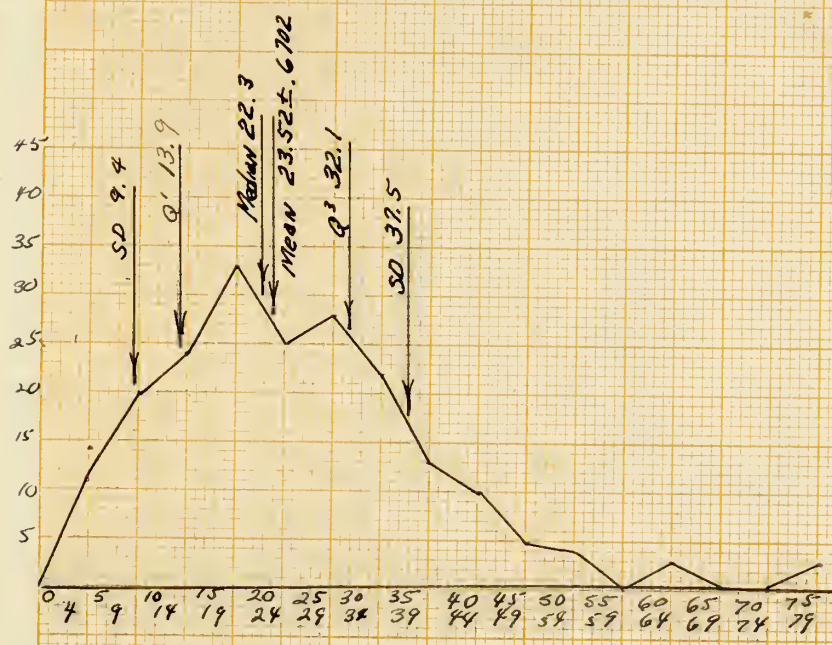
	Number	Mean	$P.E._m$	$Diff_m$	$P.E._{diff}$	$\frac{Diff}{P.E._{diff}}$
Girls	191	60.43	1.37	12.90	1.89	6.81
Boys	178	47.53	1.31			

It is concluded that the difference at the end of the third month falls short of statistical significance, while at the end of the sixth month the difference in achievement of boys and girls is found to be statistically significant.

A further analysis of the differences between the distribution of the scores of the boys and the girls may be found in the following graphs.

Graph 3

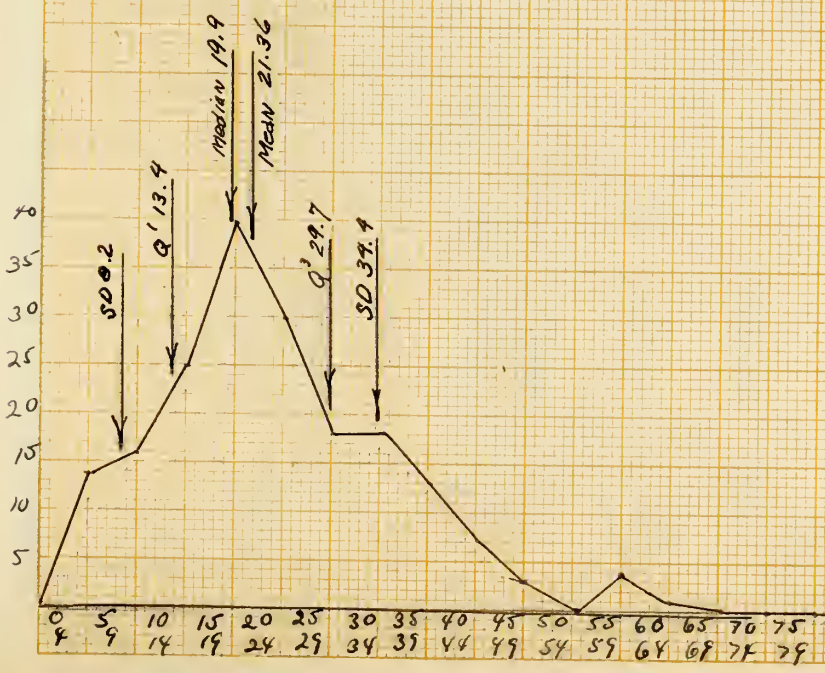
Distribution of Girls' Scores in test at third month



Girls--Third Month Score	Frequency
75-79	2
70-74	0
65-69	0
60-64	3
55-59	0
50-54	4
45-49	5
40-44	10
35-39	13
30-34	22
25-29	28
20-24	25
15-19	33
10-14	24
5-9	20
0-4	11
	N = 200

Graph 4

Distribution of Boys Scores in test at third month



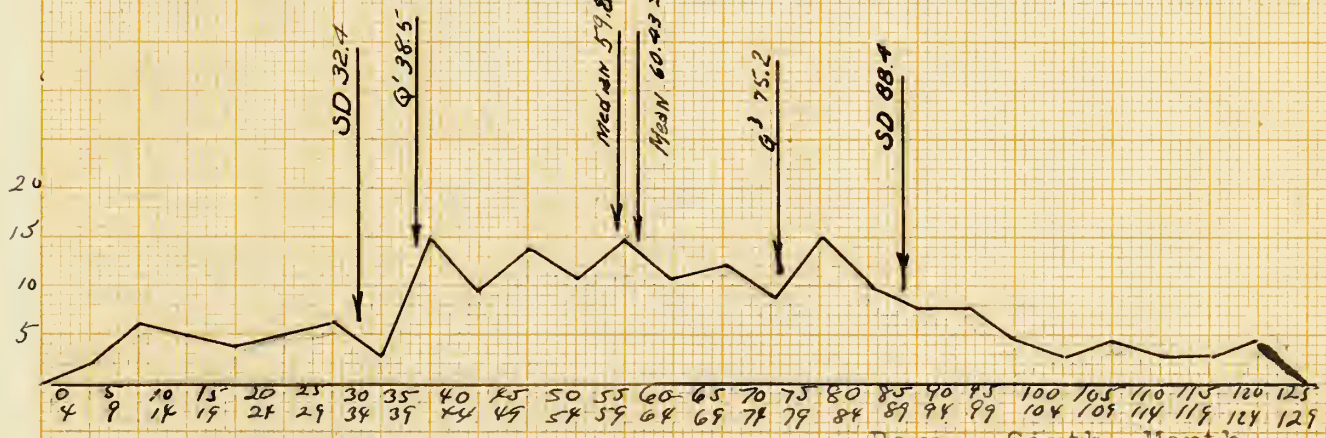
Boys--Third Month Score	Frequency
75-79	0
70-74	0
65-69	0
60-64	1
55-59	4
50-54	0
45-49	3
40-44	7
35-39	13
30-34	18
25-29	18
20-24	30
15-19	40
10-14	25
5-9	16
0-4	14
	N = 189

Graph 5

Distribution of Girls Scores in test at sixth month

Girls-- Sixth Month

Score	Freq.		
125-129	0	55-59	15
120-124	4	50-54	11
115-119	3	45-49	14
110-114	3	40-44	10
105-109	4	35-39	15
100-104	3	30-34	3
95-99	5	25-29	6
90-94	8	20-24	5
85-89	8	15-19	4
80-84	10	10-14	5
75-79	15	5-9	6
70-74	9	0-4	2
65-69	12	N	191
60-64	11		



Graph 6

Distribution of Boys scores in test at sixth month

Boys-- Sixth Month

Score	Freq.		
125-129	0	55-59	5
120-124	0	50-54	20
115-119	1	45-49	12
110-114	1	40-44	10
105-109	1	35-39	15
100-104	1	30-34	11
95-99	5	25-29	11
90-94	3	20-24	13
85-89	4	15-19	3
80-84	7	10-14	6
75-79	9	5-9	10
70-74	2	0-4	5
65-69	15		
60-64	8	N	178

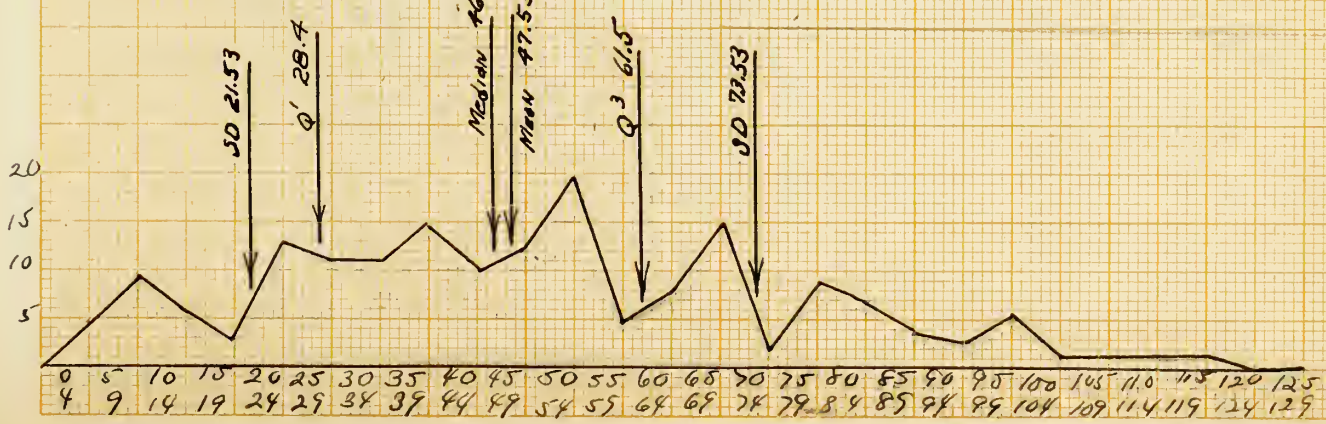


Table XIII

Statistical Summary of the Achievement of Boys and Girls in Test at Third and Sixth Months of First Year Reading

	Median	Mean	S.D.	P.E.	Q1	Q3	Q
Boys at Third Month	19.9	21.36	13.1	8.83	13.4	29.7	8.16
Boys at Sixth Month	46.6	47.53	26.	17.5	28.4	61.5	16.5

Increment of growth - 26.7

	Median	Mean	S.D.	P.E.	Q1	Q3	Q
Girls at Third Month	22.3	23.52	14.05	9.37	13.9	32.1	9.1
Girls at Sixth Month	59.8.	60.43	28.	18.8	38.5	75.2	18.3

Increment of growth - 37.5

Test at Sixth Month

Test at Third Month: Decile	Score	1 (0-14)	2 (15-24)	3 (25-33)	4 (34-39)	5 (40-46)	6 (47-52)	7 (53-61)	8 (62-69)	9 (70-84)	10 (85-125)
10	41-75							1	1	5	5
9	33-40						4		2	4	5
8	28-32							5	4	2	5
7	23-27			2	1	4	4	3	1	2	
6	21-22			2	3	4	1	2	2	1	
5	18-20		1		2	1	3	1	3	1	
4	15-17		2	3	5	3	3	2	2	1	
3	11-14	1	3	4	4	2	1		1		
2	7-10	4	5	3	1			2			
1	0-6	10	4	2							

N = 155

r = .79 ± .02

Table XIV

Correlation of Boys' Scores in Third and Sixth Months

The frequency of scores in each decile are shown on this table. One would read the table in this manner. Ten children who were in the first decile of the test at the third month remain in the first decile at the test of the sixth month; four have advanced to the second decile and two have advanced to the third decile.

The coefficient of correlation computed by the Pearson Product Moment formula equalled .79±.02 showing the degree of correlation to be a moderate one.

Test at Third: Decile	Score	Test at Sixth Month: 1 (6-23)	2 (24-38)	3 (39-46)	4 (47-56)	5 (57-61)	6 (62-68)	7 (69-77)	8 (78-86)	9 (87-96)	10 (97-125)
10	41-75						1	2	3	4	7
9	34-40			1		1	2	3	5	4	1
8	30-33					1	5	3	3	4	2
7	27-29			1	1	5	2	1		2	4
6	24-26			2	3	2	3	2	2	1	
5	20-23		4	3	4	1	3				1
4	16-19		4	3	4	3	1	2	2	2	1
3	13-15	1	4	6	1	1		1	1		
2	8-12	5	5	3	3	2	1	1	1		
1	0-7	13	2		2						

N = 174
r = .75
± .02

Table XV

Correlation between Girls' Scores in Test of Third and Sixth Months

This table, presenting the correlation between girls' scores in the test of the third month and the test in the sixth month, reveals a moderate correlation between decile position in each test. The correlation coefficient determined by the Pearson Product Moment formula proved to be .75±.02.

It is noted that the correlation of boys' scores is a small degree higher than that of girls, the coefficient for boys equalling .79±.02 and that for girls, as presented above, .75±.02.

Relation of Mental Age with Score on

Word Recognition Test

Test at Sixth Month

Binet Mental Age \ Decile / Score	1	2	3	4	5	6	7	8	9	10
	0-19	20-29	30-38	39-46	47-53	54-62	63-71	72-80	81-92	93-125
9.9-9.10										2
9.5-9.8			1			1				
9.1-9.4			1	1		1			1	1
8.9-9.0					1		1		1	
8.5-8.8			1		2	1	3		3	1
8.1-8.4		1	1	1	3	1	4	4		4
7.9-8.0		5	2	3		2	3	3	4	2
7.5-7.8			3	1	3	1	1	1	2	3
7.1-7.4	3	4	4	6	5	6	4	1	2	1
6.9-7.0	3	4	3	6	2	3	4	3	3	1
6.5-6.8	2	1	3	1	3		2	2		2
6.1-6.4	2		3	3	4		2		1	
5.9-6.0	5	1	2	2				1	2	
5.5-5.8	4	1	4	1		1	1			1
5.1-5.4	1	2								1
4.8-5.0	1	1	1			2				
4.4-4.7										
4.0-4.3	1									

N = 216

Table XVI

This table shows the relation between Binet Mental Age and score on word recognition test in sixth month of first year of reading.

A more detailed discussion follows after a similar table showing relation between Kuhlmann-Anderson Mental Age and score on word recognition test.

Test at sixth month

Kuhlmann Anderson Mental Age (Decile score / Mental age)	1	2	3	4	5	6	7	8	9	10
9.5-9.8								1		
9.1-9.4										
8.9-9.0						3	1	1		
8.5-8.8	2	1	4	3	7	4	6	3	7	6
8.1-8.4	2	6	5	2	3	4	9	3	2	6
7.9-8.0	1	4	2	7	4	2	1	5	4	2
7.5-7.8	1	5	7	4	5	4	5		3	2
7.1-7.4	3	2	6	6	5	5	3	4	4	3
6.9-7.0	4	1	4	2	3	3	1	2		1
6.5-6.8	4	1	2	4	1	1	1	3	2	2
6.1-6.4	1	4	2	4		1			2	
5.8-6.0	3	4	1		1		1		1	1
5.4-5.7	3	1	1	1						
5.0-5.3	2					1				

N = 277

Table XVII

This table makes graphic the relation between Kuhlmann-Anderson Mental Age and score on word recognition test in sixth month of the first year of reading.

Arthur,[25] Zornow and Pechstein[26] have shown that a mental age over six is necessary before the child is ready to learn to read. Zornow and Pechstein conclude in their study that nearly all children who have failed in the first grade are among those of low mental age - below six years. Gates,[27] in his list of causes for deficiency in word recognition, has listed inferior mental capacity as the first factor, followed by lack of experience as the second factor. Dolch[28] and Dickson[29] have shown that the strongest single factor in the pupil's success in reading is his degree of intelligence.

A study of the preceding tables showing the relation between Binet Mental Age and score on the test at the sixth month, proves that no certain prediction can be made on the basis of mental age. In almost every mental age group, there is a great variation in decile position in the test of the sixth month. To be specific, in the Binet mental age group 5 years 1 month through 5 years 4 months, one case falls in the highest decile of the word recognition test. Likewise,

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25. Arthur, Grace — "A Quantitative Study of Results of Grouping First Grade Children According to Mental Age - Journal of Educational Research - Vol. 12 Pages 173-85 - Oct. 1925

26. Zornow, T. A. and Pechstein, L. A. — "An Experiment in Classification of First Grade Children through Use of Mental Test." Elementary School Journal Vol. 23 Oct. 1922

27. Gates, A. I. — "The Improvement of Reading" Pages 117-120 McMillan Company 1928

28. Dolch, E. W. — "The Psychology and Teaching of Reading" Ginn - 1931 Page 139

29. Dickson, V. — "What First Grade Children Can Do As Related to What is Shown by Mental Tests" Journal of Ed. Res. Vol. 2 Pages 475-480 - 1930

in a study of the Binet mental age group 9 years 1 month through 9 years 4 months, there is a case placed as low as the third decile in the word recognition test.

Therefore, it is concluded that a low mental age might be a factor in determining a low score on this word recognition test, but it does not exclude the possibility of attaining a high score; a high mental age might be a factor in determining a high score on this test but it does not exclude the possibility of attaining a comparatively low score.

Chapter IV

Summary and Conclusions

Summary and Conclusions

A word recognition test was constructed which contained one hundred twenty-five words selected at random from the Gates Vocabulary for Primary Grades. The test was presented at intervals of three months throughout the school year. (Only the measures of the third and sixth months appear in this study.)

Results

1. By presenting the test to approximately three hundred seventy children, it was made possible to standardize the test.
2. The tentative norm established for the test at the third month is 21.1, and the tentative norm for the sixth month 52.9.
3. A study of correlation showed that it was not possible to determine the decile position of a child in the test of the sixth month, with certainty, from his decile position in the test of the third month. The Pearson coefficient of correlation equalled $.78 \pm .02$.
4. It was shown that no definite prediction of success in the test might be made on the basis of mental ages determined by the Binet and Kuhlmann-Anderson mental tests.
5. In a study of sex differences on the test it was proved, statistically, that the difference of 2.16 between mean scores of boys and girls, in test at third month, was not significant. The difference of 12.9 between the mean scores in the test of the sixth month was found significant, showing that the girls' achievement in word recognition

is greater than that of boys at this interval in the first grade.

6. The correlation of boys' scores between the test of third month and sixth month was found to be higher than that of girls. The correlation coefficient for boys equalled $.79 \pm .02$, and that for girls $.75 \pm .02$. The difference is not large enough to be significant.

Supplement

Summary of Word Recognition Test at Ninth Month

Summary of Word Recognition Test at Ninth Month of School Year

The third measure of the word recognition skill in grade one was presented in the ninth month of the first school year. The test consisted of one hundred fifty words - the one hundred twenty-five words already presented in test of sixth month, plus twenty-five new and more difficult words.

Tables and graphs summarizing the results of this final measure appear on the following pages.

After the frequency of correct response to each word was checked, the one hundred fifty test words were arranged in exact order of difficulty. The words are presented in the final order on the following page.

Final Order of Test Words

One Hundred Fifty Words in Order of Difficulty Determined by Checking Frequency of Correct Responses

to	359	like	276	pen	151
the	353	was	275	frog	149
I	353	eat	269	lamb	146
in	351	around	268	picture	144
little	351	make	261	joy	141
boy	350	white	258	well	137
tree	350	under	257	himself	136
girl	349	hop	256	before	136
play	349	rain	255	pat	132
see	349	barn	251	sand	126
dog	347	out	248	please	123
jump	345	king	243	shell	118
run	343	live	239	cover	118
it	342	table	238	animal	116
go	341	cry	231	skip	113
come	341	sleep	231	place	109
me	337	cold	227	first	105
we	336	call	225	shut	104
yellow	330	chicken	224	dark	102
mother	327	has	224	teacher	100
cat	327	time	223	creep	100
you	327	peep	221	people	96
look	326	went	219	chimney	92
is	324	say	216	sail	92
are	323	fish	213	talk	91
baby	323	top	212	bark	90
milk	322	asleep	209	west	90
children	322	other	202	river	88
away	320	back	198	inside	88
he	318	chair	198	afraid	82
she	316	seen	196	kick	79
one	312	fat	191	shine	70
red	310	name	191	strong	69
all	309	breakfast	188	smell	67
day	306	gun	187	number	66
for	304	catch	186	block	64
father	301	orange	179	world	64
ball	298	balloon	174	blossom	61
sun	295	lost	171	dream	59
big	294	cut	168	hurry	59
door	291	horn	163	papa	56
house	290	sister	162	quick	53
pig	288	rose	160	remember	47
good	283	clock	159	captain	47
man	282	blow	158	life	46
this	279	tall	156	speak	45
do	279	pin	155	alone	43
morning	278	hole	155	corner	42
happy	278	love	154	dirt	38
bed	276	wag	153	terrible	17

Analysis of the Testing at the Sixth Month

Number of Correct Responses on Word Recognition Test
of 365 Children at End of Ninth Month of
First Grade

Median	Q_1	Q_3
87	59	107.2

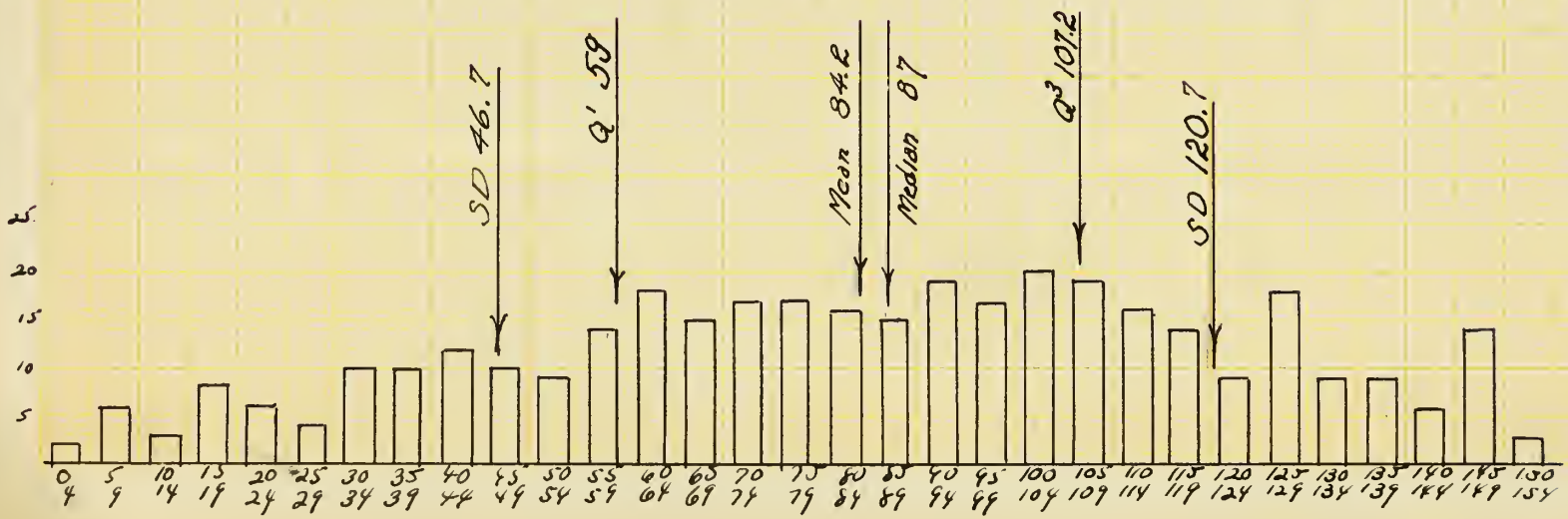
Distribution of Scores of 365 First Grade Children
On Word Recognition Test at End of Ninth Month

Score	Frequency
150-154	3
145-149	14
140-144	6
135-139	9
130-134	9
125-129	18
120-124	9
115-119	14
110-114	16
105-109	19
100-104	20
95-99	17
90-94	19
85-89	15
80-84	16
75-79	17
70-74	17
65-69	15
60-64	18
55-59	14
50-54	9
45-49	10
40-44	12
35-39	10
30-34	10
25-29	4
20-24	6
15-19	8
10-14	3
5-9	6
0-4	2
	365

Mean 84.2
S.D. 36.5
68.26% of cases 84.2 ± 36.5

Median		87.
Mean		84.2
Q_1	-	59
Q_3	-	107.2
SD	-	46.7
SD	-	120.7

test in ninth month



From a study of the graph one notes again the comparative normality of the curve - median at 87, mean at 84.2. In determining the variability of the scores the standard deviation and quartile deviation have been computed. Sigma, or standard deviation equalled 36.5. Therefore, at the third measure 68.26% of the cases fell between points 46.7 and 120.7. It was determined that the first quarter point fell at 59, and the third quarter point at 107.2. Therefore, the middle fifty percent of the cases fell between these points.

It will be of interest to the reader to compare this graph with the graphs showing distribution of scores at the third month, and at the sixth month.

Analysis of the Results of the Ninth Month
Test by Individual Schools

School	Number of Pupils		Median
I Aldine BK	59 27 Girls 32 Boys		91 100 76
II Aldine	63 29 Girls 34 Boys		80 103 76
III Gates	33 19 Girls 14 Boys		92 106 76
IV Aldine	94 43 Girls 51 Boys		72 74 70
V Aldine & Pennell-Cusack	62 36 Girls 26 Boys		97 109 89
VI Pennell-Cusack	53 32 Girls 21 Boys		93 97 90
Total	365 178 Boys 187 Girls	Total	87 76 89.8

School	MEDIANS			MEDIAN GAIN		
	Third Month 389 Cases	Sixth Month 369 Cases	Ninth Month 365 Cases	Between 3rd & 6th	Between 6th & 9th	Between 3rd & 9th
I Aldine BK	26	57.5	91	31.5	33.5	65
II Aldine BT	19.1	46	80	26.9	34	60.9
III Gates	25.5	60.5	92	35.0	31.5	66.5
IV Aldine	20.1	43	72	22.9	29	51.9
V Aldine & Pennell-Cusack	28.5	62	97	33.5	35	68.5
VI Pennell-Cusack	14.2	58	93	44.3	35	78.8
Total	21.1	52.9	87	31.8	34.1	65.9

This table presents a comparison of the medians of the five schools at the third, sixth, and ninth month of the school year. It will be noted that schools V and VI, schools of Pennell-Cusack Reading method, made the greatest individual gains. The gain of the individual school between the third and sixth, sixth and ninth, third and ninth months of the school year is also represented.

Girls

NINTH MONTH

Mean 90.2
Median 89.8

Q^1 67.65

Q^3 113.5

SD 126.3
SD 54.1 } 68.26%

Boys

NINTH MONTH

Mean 76.9
Median 76

Q^1 50.41

Q^3 98.25

SD 41.9
SD 111.9

Summary of Sex Differences on Word Recognition Test

Difference at End of Third Month

	Number	Mean	$P.E._m$	$Diff_m$	$P.E._{diff}$	$\frac{Diff}{P.E._{diff}}$
Girls	200	23.52	.6702	2.16	.92	2.4
Boys	189	21.36	.6430			

Difference at End of Sixth Month

	Number	Mean	$P.E._m$	$Diff_m$	$P.E._{diff}$	$\frac{Diff}{P.E._{diff}}$
Girls	191	60.43	1.37	12.90	1.89	6.81
Boys	178	47.53	1.31			

Difference is Statistically Significant

Difference at End of Ninth Month

	Number	Mean	$P.E._m$	$Diff_m$	$P.E._{diff}$	$\frac{Diff}{P.E._{diff}}$
Girls	187	90.2	1.78	13.3	2.49	5.3
Boys	178	76.9	1.75			

Difference is Statistically Significant

The above table, presenting a summary of Sex Differences on Word Recognition Test, shows that the sex difference in achievement at end of third month equalled 2.4 (falling short of statistical significance). At the end of the sixth month the difference had increased to 6.81, proving statistically significant. At the end of the ninth month, the difference is significant, but is 1.51 less than the difference at end of sixth month.

I

SIXTH MONTH

Third Month (Decile)	Score	1 (0-19)	2 (20-29)	3 (30-38)	4 (39-46)	5 (47-53)	6 (54-62)	7 (63-71)	8 (72-80)	9 (81-92)	10 (93-125)
10	40-75					1	2	1	6	11	11
9	33-39				1	4	2	4	10	8	4
8	29-32				1	2	6	9	3	7	9
7	25-28			2	4	3	7	6	3	1	3
6	21-24		2	4	10	8	7	4	1	1	1
5	18-20		2	5	3	6	3	4	3	1	1
4	15-17		7	9	5	7	3	2	2	2	1
3	12-14	1	3	9	8	2	2	3	2		
2	7-11	9	12	4	2	3	3				
1	0-6	22	6	2		1					

$N = 329$

$r = .78 \pm .02$

II

NINTH MONTH

Sixth Month	Score	1 (0-29)	2 (30-48)	3 (49-62)	4 (63-73)	5 (74-84)	6 (85-96)	7 (97-104)	8 (105-114)	9 (115-129)	10 (130-150)
10	92-125								1	7	21
9	80-91							5	5	12	6
8	70-79					1	3	4	11	8	2
7	62-69			1		2	7	10	6	5	
6	54-61			3	2	5	4	11	3		
5	48-53			5	7	8	7	2	1	1	1
4	41-47			8	9	8	4		1		
3	34-40		5	9	8	6	4				
2	21-33	3	18	5	4	1			1	1	
1	0-20	26	6				1				

$N = 305$

$r = .905 \pm .006$

III

NINTH MONTH

Third Month	Score	1 (0-35)	2 (36-52)	3 (53-65)	4 (66-76)	5 (77-87)	6 (88-97)	7 (98-106)	8 (107-116)	9 (117-125)	10 (130-150)
10	38-75			2		2	2	6	5	11	8
9	32-37		1	2	2		2	5	7	9	4
8	29-31			1		2	5	6	6	5	7
7	25-28			4	6	3	5	4		1	4
6	21-24	1	2	4	6	4	4	2	6	2	3
5	18-20		5	4	6	4	2	5	2	1	2
4	16-17	1	5	4	4	3	3	1	1	3	2
3	13-15	2	5	8	3	5	2	1	1	1	1
2	8-12	8	9	4	1	6	2	2	2	1	
1	0-7	18	3		1	2	4				

$N = 309$

$r = .57 \pm .025$

Table showing correlation of scores - third month and sixth month, sixth month and ninth month, third month and ninth month.

The table on the previous page presents a composite view of the correlation between decile placement on word recognition test of third month and sixth month, sixth month and ninth month, third month and ninth month of the first school year.

A study of Correlation Chart I shows that a child's success in the sixth month might be predicted with some degree of certainty from his placement in the third month.

Correlation Chart II presents the correlation between scores of the sixth month and ninth month. The correlation factor here is .905 showing that the general decile placement in the ninth month might be predicted with certainty. A few remarkable variations will be noted, however, for instance - one child placed in the second decile at the sixth month makes an enormous gain and is placed in the ninth decile at the ninth month. A study of individual cases would be necessary to determine causes for unusual variations of this kind.

A study of the third chart, correlation between third and ninth months, shows a great variation in decile placement, and a comparatively low correlation coefficient of .57. Nevertheless, it is shown that sixty-four percent of the cases which placed in the first decile at the third month remain in that decile at the sixth month. Thirty-six percent vary in placement from the second to the sixth decile. It is concluded, then, that those pupils who make a low score in the third month will tend to make a

comparatively low score in the ninth month. Since no studies of the individual cases has been completed, only the most general conclusions may be drawn.

Appendix

Record Sheet of Test at Third Month

PRIMARY WORD RECOGNITION TEST #1

Name----------	School----------	----------
Date----------	----------	----------
the----------	little----------	table----------
I----------	has----------	white----------
you----------	eat----------	good----------
he----------	run----------	door----------
in----------	bed----------	like----------
me----------	she----------	cry----------
to----------	live----------	rain----------
go----------	big----------	love----------
one----------	red----------	father----------
do----------	ball----------	chair----------
all----------	this----------	time----------
see----------	mother----------	yellow----------
it----------	milk----------	cut----------
are----------	out----------	away----------
we----------	under----------	sister----------
boy----------	make----------	sun----------
is----------	baby----------	morning----------
for----------	say----------	children----------
man----------	come----------	sleep----------
was----------	went----------	clock----------
day----------	house----------	chicken----------
girl----------	pig----------	please----------
cat----------	play----------	picture----------
dog----------	jump----------	name----------
tree----------	top----------	cold----------

Record Sheet of Experimental Test

Name---------- School----------

Date----------

man	happy	balloon	way
was	first	frog	finger
eat	river	catch	circus
table	cover	yard	gun
white	low	fish	rose
under	half	people	animal
sleep	back	himself	pin
live	horn	time	orange
say	pen	alone	log
out	fat	almost	tonight
morning	hear	dark	lie
went	pencil	tall	hear
picture	look	telephone	smile
sister	sand	bug	sail
cold	talk	hole	sidewalk
top	around	auto	field
name	before	barn	shut
cry	skip	call	bump
chair	blow	sleep	pat
time	well	hello	present
clock	other	cart	puppy
cut	king	asleep	lamb
chicken	place	bark	quick
rain	soap	breakfast	late
please	leaf	block	skate

D.B.

School 1.

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	5-4	4-11	92	7-1	132	7.00			12	50
2	7-4	7-8	105	7-0	95	7.20	6.60	6.90	24	48
3	5-10	5-10	100	6-5	110		6.00			
4	4-11	6-11	140	7-1	144	7.25	6.75	7.00	13	34
5	7-7	8-3	108	5-7	74	7.20	6.00	6.60	13	31
6	6-8					7.55	6.80	7.18	22	
7	6-10	6-5	94			7.30	6.90	7.10		46
8	6-0	6-9	112	6-7	109	6.67	7.15	6.91	12	23
9	6-9	7-9	115			6.75	6.80	6.78	17	42
10	7-5	7-7	102	7-9	104	6.00	6.90	6.45	22	41
11	5-3	5-3	100	7-0	134	7.20	6.00	6.60	13	44
12	5-10	6-9	115	7-0	120		6.00		15	36
13	6-7	8-0	121							
14	5-10	6-7	112			7.10	6.70	6.90	10	23
15	6-7	6-3	95	7-4	111	7.05	6.70	6.88	13	38
16	5-6	6-10	124	7-1	128		6.60		15	
17	5-10	6-2	105	7-3	124	7.05	6.00	6.53	13	41
18	5-10	5-10	100	7-3	124	6.00	6.00	6.00	6	25
19	5-8	7-7	134	7-0	124	7.40	6.60	7.00	18	65
20	6-7	5-6	84	5-0	76	6.60	6.00	6.30	8	23
21	5-8	6-6	115	7-3	128	7.05			17	61
22	7-5	7-5	100	7-2	96	7.05	6.60	6.83		54
23	5-10	6-9	115	7-6	129				13	36
24	6-4			6-1	96	6100	6.00	6.00		38
25	7-9	7-4	94	6-6	84	8.00	7.50	7.75	37	92
26	7-8	8-3	108	6-7	86	6.00	6.00	6.00	19	37
27	5-2	6-6	126	7-4	142	7.35			17	45
28	6-0	5-7	94			6.67	6.00	6.37		
29	7-9	7-11	102			6.75	6.80	6.78	14	30

D.B.

	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	6-6	4-11	76							
2	6-4	5-7	88	5-5	85					
3	6-6	Below		5-6	84					
4	7-3	5-9	80			6.00	6.00	6.00	11	25
5		Below								
6	6-4	6-0	95	5-1	80	6.00	6.00	6.00	6	20
7	6-3	6-9	107	5-10	93	6.00			4	5
8	6-5	Below								
9	6-1	5-3	86	7-2	117					
10	6-8	6-3	94	5-7	84	6.00				8
11	6-7	5-10	89	5-5	82				5	5
12	5-11	6-10	116	6-3	105	6.00			9	19
13	7-0	5-1	73	4-6	65					
14	6-6	4-8	72	5-1	78					
15	7-5	Below		4-7	62					
16	6-3	5-4	85	5-10	93	6.67	6.00	6.34	10	19
17	6-0	6-0	100	5-6	91	6.67				15
18	6-4	6-2	97							
19	8-1	6-8	83	6-0	74	7.20	7.15	7.18	27	30
20	6-3	Below								
21	5-11					6.00				14

D.B.

School 1-B.

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	6-6	8-9	134			7.65	7.05	7.35	21	67
2	6-8	7-4	110			7.20	6.60	6.90	17	58
3	6-4	7-1	112			6.67			22	38
4	6-2	6-7	106	7-0	114	7.50	7.00	7.25		65
5	6-1	7-4	120			7.00	6.00	6.50	24	50
6	6-11	8-7	124	7-7	109	7.45	6.90	7.18	24	80
7	7-3	8-7	118	7-1	98	7.35	7.30	7.33	28	54
8	5-11	8-4	140				6.00		25	
9	6-1	8-1	133			8.60	7.85	8.23		110
10	6-8	6-7	99	7-0	105	7.70	7.50	7.60	29	89
11	6-6	8-0	123	8-8	133				32	
12	6-2	8-3	133	7-8	124				40	
13	6-2	8-3	131			7.50			24	70
14	6-7	7-2	109	6-9	102	7.87	6.80	7.34	29	93
15	6-3	6-8	106	8-5	134	7.30	6.90	7.10	30	89
16	6-7	8-6	129	7-8	117	6.70			14	35
17	6-6	8-4	128	9-0	138		7.20		18	
18	6-9	6-6	96	7-1	105	7.80	7.60	7.70		103
19	6-1	7-8	126	7-10	128	7.40	7.55	7.48	18	68
20	6-7	8-0	121	6-1	92	7.10	7.15	7.13	17	37
21	6-9	8-3	122	7-5	110	8.05	7.60	7.83	32	99
22	6-0	8-5	140	8-8	144	8.50	7.50	8.00	28	100
23	6-2	7-8	124	7-10	126	7.93	7.65	7.80	31	92
24	6-3	7-10	125	7-4	117		7.55		31	98
25	6-2	7-2	115	7-6	121	7.05	7.65	7.35	32	83
26	6-7	7-9	118				7.10		19	
27	6-0	7-4	122	7-9	129	7.40	7.15	7.28	35	78
28	6-10	8-0	117	5-7	82	6.70	6.00	6.35	19	57
29	6-9					7.45	7.60	7.53		82
30	6-0	6-5	107	6-9	112	7.20			24	46
31	6-2	7-7	123	5-7	90		6.00		13	
32	7-1	7-1	100	5-11	83	7.65			32	89

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 33	6-7	8-4	126			9.05	8.00	8.53	30	112
34	6-1	8-3	135	8-9	144		7.55		30	
35	6-10	8-1	118				7.10		23	62

B

school 2	C.A.	K.A. M.A.	I.Q.	Binet M.A.	I.Q.	Gates Reading I	II	AVE.	Scores DEC.	MAR.
Case 1	6-10	6-11	101	7-3	105		7.20		35	80
2	5-8	8-6	150	7-1	125		7.65			
3	7-0			5-8	81		6.00			36
4	6-9	6-7	97				6.80		0	2
5	6-3	132					7.90		58	105
6	5-5	7-6	138	7-1	130		7.20		30	83
7	6-10	8-7	125	8-4	122		7.50			
8	5-10	7-9	133				7.60		36	90
9	6-1	7-11	130				7.00		8	23
10	6-8	8-5	127				6.00			
11	5-4	6-6	121	5-4	111					25
12	6-1	7-4	120	6-5	105		6.90		26	96
13	6-3	6-8	107	5-11	95		7.00		6	15
14	6-10	8-7	125	8-8	127		7.55			83
15	7-0	8-8	124				8.60			
16	6-2	6-2	100	6-4	103				19	42
17	7-0	6-0	86				6.75			
18	6-2	8-0	130				7.30		32	94
19	5-10	7-4	126	7-9	133		7.10		29	75
20	7-4	8-8	118						39	52
21	6-4	8-8	137	8-8	137		6.90			71
22	7-6	7-3	97				7.65			
23	6-10	5-10	85	4-11	72		7.15			
24	8-9	6-1	70				7.50		52	83
25	6-8	8-1	121	8-3	124		7.60		42	90
26	6-9	7-11	117	5-11	88		6.75		16	41
27	6-4	8-3	130	8-0	127		7.50		34	
28	6-5	9-5	146	8-3	128				46	79
29	6-3						7.15		30	53
30	6-10	7-9	113	7-3	106		6.90		24	51

	C.A.	K.A. M.A.	K.A. IQ.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 31	6-1			7-6	123					
32	6-0	6-9	113	8-2	136				25	65
33	6-7	7-2	109	6-11	105		6.60		19	47
34	6-8	7-5	111	7-6	112		6.00			52
35	6-8	5-0	75	4-8	70				0	
36	6-8			6-3	93		6.60			1
37	6-8			6-6	97		6.00			1

B

Name School 2-B.	C.A.	K.A. M.A.	I.Q.	Binet M.A.	I.Q.	Gates Reading I	II	AVE.	Scores DEC.	MAR.
Case 1	6-2	8-8	140	7-4	119		6.00		31	82
2	5-5	6-7	121	7-1	130		6.75		18	73
3	7-2						6.75		25	57
4	6-3	6-4	101	6-2	99				1	7
5	7-3	7-2	103				6.00		21	58
6	7-0	6-5	92				7.10		43	79
7	6-5	8-8	135	6-11	108				34	78
8	6-7	6-7	99	5-6	84				22	
9	6-5	6-0	93	5-10	91					
10	6-6	8-1	124	8-4	128		7.40		31	77
11	6-8	7-10	118				7.10		36	80
12	7-3	8-4	115	5-8	78		7.15		32	66
13	6-8	7-3	109				6.80			55
14	6-3	7-5	118				6.75		12	
15	6-3	7-10	125	7-0	112		6.70		25	57
16	8-1	7-5	92				6.70			
17	6-5	7-7	118	6-5	100				15	48
18	10-0			5-5	54					
19	6-5	8-2	127	6-11	108		6.75		11	24
20	7-10	8-6	109	6-5	82		7.20		46	74
21	5-2								24	28
22	7-3	7-2	99				7.00		20	37
23	7-1	7-5	104	6-7	93		7.65		56	103
24	6-0	7-9	129	8-8	144		7.10		34	
25	6-10			6-11	101					6
26	6-5	7-5	115	8-2	127		6.60		19	35
27	6-8	7-10	118				6.60		22	49
28	6-4	8-8	136	7-9	122		8.80			117
29	5-10	7-4	125				7.05		32	93
30	6-3	8-8	139	8-0	129		6.75		23	
31	5-10	7-9	133	7-4	126		6.75		25	75
32	6-8	8-3	123						9	25
33	6-3									

	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	AVE.	Scores DEC.	Scores MAR.
Case 34	6-3	8-3	132				7.65		41	
35	6-5	8-4	130				7.50		36	86
36							7.20			98
37	7-5	7-9	105	7-4	99					7
38										35
39	6-4	5-7	88	6-10	108					35

Ch.

School 3	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	5-9			7-2	124	7.25	6.75	7.00	12	37
2	6-8	7-1	106	6-0	90	6.90	6.80	6.85	15	27
3	6-9	7-6	111	5-8	83	7.40	6.90	7.15	14	32
4	6-9	7-1	105	5-10	87	6.75	6.90	6.83	7	6
5	5-11	8-1	137	6-2	104	7.15	6.70	6.93	17	32
6	6-2	8-5	137	6-8	107	6.60	6.70	6.65	7	12
7	6-7	7-1	107			7.65			30	67
8	6-4	8-2	129	7-4	115	7.50			25	45
9	5-4	7-0	130	7-1	132		6.70			
10					135					
11	7-1	8-4	118	7-10	110				26	
12	7-2	8-5	118	6-8	93	7.65			31	53
13	5-9			7-1						
14	5-7	8-6	152	7-0	125	7.70	7.20	7.45	20	68
15	6-11	8-3	119	6-3	90	7.65	7.15	7.40	16	51
16	6-8					7.83	7.10	7.47	37	68
17	6-7	8-5	127	8-4	126	7.80			26	69
18	5-10	7-6	129	7-3	124	7.15	6.70	6.93	19	
19	5-9	8-0	140	6-9	117	7.30	6.75	7.03	18	46
20	7-3	8-1	111	7-4	101	7.77	7.15	7.46	31	68
21	7-4	8-4	114	8-6	116	7.70	7.15	7.43	31	68
22	5-8	8-3	145	7-10	138	7.40	7.05	7.13	31	67
23	6-2	8-4	135	8-2	132	9.10	8.00 ½	8.55	53	107
24	6-3	8-5	135			7.87	7.70	7.79	34	89
25	6-5	8-5	131	7-11	123	7.80	7.20	7.50	44	82
26	6-0	7-11	132	6-3	104	7.10	7.00	7.05	19	
27	5-10	8-5	144	7-3	124		7.15		10	36
28	6-9	8-4	123	9-5	139	7.60	6.90	7.25	12	54
29	5-9	7-7	131	7-3	126		7.00		9	
30	5-9	7-6	130	8-3	141		7.15		31	63
31	5-4	8-7	161	7-4	137	7.25	7.30	7.28	14	44
32	5-7	7-11	141	7-7	135		7.05		13	42

	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 33	6-2	8-7	140	9-3	150	8.20	7.40	7.80	37	87
34	5-7			7-11	142		8.30			118
35	6-10	8-5	123	8-4	122	8.60	7.55	8.08	60	105
36	6-8	8-6	128	6-10	102	7.35	7.10	7.23	39	60
37	5-11	8-3	140	7-6	127	7.30	6.90	7.10	17	47
38	6-4	8-3	130	7-0	110	7.60	7.05	7.33	26	66
39	7-3	8-5	116	7-10	108	7.90	7.05	7.48	38	71

K.

School. 4. (a)

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	6-4	7-10	123			7.70	7.65	7.68	25	79
2	6-1	7-2	118			6.75	7.00	6.87	22	33
3	6-2	6-6	105			8.15	7.60	7.88	57	99
4	7-0	7-0	100	9-9	139	8.00	7.40	7.70	38	116
5	7-0	7-6	107	8-0	114	6.80	6.00	6.40	4	20
6	7-0	7-8	110	8-0	114	6.64	6.00	6.32	10	27
7	6-4	8-1	128	7-9	122	7.97	7.75	7.86	37	
8	6-4	8-4	131			6.67	7.00	6.85	11	20
9	6-3	8-6	136	9-1	145	8.90	7.75	8.33	62	110
10	6-11	8-5	121			7.10	7.30	7.20	14	42
11	6-5	7-1	110	8-5	130	9.30	8.80	9.05	75	123
12	5-8	7-7	134			7.00	6.60	6.80	21	36
13	7-9	7-5	95	7-8	99	8.30	7.50	7.90	61	99
14	8-3	7-11	96			7.65	7.50	7.58	59	88
15	6-8	6-11	103			7.50	6.75	7.12	18	50
16	6-9	8-1	120			6.00	6.00	6.00	8	13
17	5-10	8-7	147	9-2	158	6.70	6.90	6.80	22	43
18	6-3	6-2	98	7-9	124	6.00	6.00	6.00	9	22
19	6-8	8-2	123			6.00	6.90	6.45	25	37
20	6-8	7-11	119	8-3	124	7.45	6.75	7.10	38	78
21	5-11	7-9	131	8-3	139	6.80	7.20	7.00	20	50
22	6-3	6-9	108			6.70	6.80	6.75		36
23	6-5			8-3	128	6.80	7.20	7.00	32	60
24	6-10			8-1	118	7.10	7.00	7.05	26	46
25	6-3	8-2	130	8-1	129		7.40		16	
26	7-0	8-5	120	8-6	121	7.60	6.70	7.15	16	49
27	6-9	7-6	110	7-4	108	6.00	7.30	6.65	6	14
28	6-9	7-11	117			7.35	6.90	7.13	22	46
29	6-5	8-7	133	8-1	125	7.00	7.40	7.20	16	47
30	6-4	7-11	125	9-0	142	7.20	7.10	7.15	33	64
31	6-7			6-9	102	6.00	6.00	6.00	4	8
32	6-8	7-4	110	8-0	119	6.75	7.05	6.90	16	28
33				9-5	153	7.05	6.75	6.90	19	35

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 34	6-3	7-10	125	7-9	124	7.55	6.90	7.23	21	
35	6-10	8-7	125	9-0	131	8.50			48	84
36	6-8	8-3	124	8-6	128	6.80	6.00	6.40	15	23
37	6-2	7-9	126	8-5	136	7.70	7.60	7.65	52	87
38	6-3	8-10	141	8-6	136	7.73	7.55	7.65	27	60
39	6-9	8-4	123	7-0	103	7.35	7.10	7.23	34	75
40	6-6	8-1	124	6-9	103	7.70	7.50	7.60	25	
41	6-10	8-6	124	7-10	115	6.80	6.70	6.73	17	34
42	5-9	7-9	134			8.80	8.00	8.40	41	
43	6-5			7-1	110	6.00	6.75	6.38		27

K.

School 4 - (b)	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	AVE.	Scores DEC.	Scores MAR.
Case 1						7.90	7.50	7.70		
2	6-2	8-2	133			7.30	7.10	7.20	19	50
3	6-5	8-2	126	6-9	105	7.35			25	66
4	6-2			8-3	134	7.90	6.80	7.35		
5	7-2	8-6	119	7-9	107	7.45	7.10	7.28	29	58
6	6-0	6-7	110	6-5	106		6.75		20	48
7	6-5			6-5	100	7.15	6.80	6.93		
8	6-4	72	113	7-4	116	6.64	6.60	6.62	14	39
9	6-5	7-3	112				6.60		24	41
10	6-7	7-8	116	6-8	101	6.80	6.60	6.70	11	36
11	7-6	8-6	113	7-6	100	7.45	7.10	7.28	17	34
12	6-9	5-1	75			7.00	6.00	6.50	8	12
13	5-11	8-1	136	7-3	122	7.40			23	62
14	5-11	7-2	121	6-3	106	7.50	6.70	7.10	27	68
15	7-9			6-5	83	7.45	7.00	7.23		68
16	6-9	8-2	120	7-0	103	7.15	6.60	6.88	12	12
17	6-7	7-9	117	7-0	106	7.40	6.90	7.15	10	29
18	6-4	7-4	116	4-10	76		6.60		26	59
19	6-2	5-9	93						3	
20	6-10	7-6	109			7.60	6.75	7.18	36	78
21	6-4	7-2	113			7.00	7.00	7.00	21	4 4
22	7-5	8-5	113	7-1	95	7.00	6.00	6.50	17	23
23	6-4	7-7	120	6-1	96	7.00	6.75	6.88	22	39
24	6-5	7-7	118	6-5	100		6.00		19	
25	6-6	7-2	110	6-9	103	7.25	6.00	6.63		
26	6-11	8-7	124	9-0	130	7.35	7.00	7.18	35	52
27	7-0	7-1	101	6-3	89	7.15	6.00	6.58	21	46
28	6-2	5-9	93				6.00		12	
29	6-3	5-6	88	6-9	108				22	
30	6-0	6-7	110	6-3	104	7.45	6.00	6.73	17	50
31	6-9			6-9	100	7.20	6.00	6.60	27	46
32	7-0	7-7	108				6.75		20	

	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 33	6-1			6-6	107	6.60	6.00	6.30		
34	7-9	8-5	108	8-2	105		6.00		41	53
35	5-11	7-9	130	7-3	122	7.15	6.60	6.88	25	52
36						7.20	6.80	7.00		53
37	6-6	8-4	128				6.00			
38	6-0	7-1	117	6-10	114	6.80	6.70	6.75	17	38
39	6-4	8-0	126	7-1	112	7.65	7.05	7.35	21	83

K.

School 4 (C)

Case	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
1	6-1	7-0	114	4-11	80	7.15	6.00	6.58	16	59
2	6-5	6-7	102	7-2	111	6.60	6.70	6.65	4	7
3	6-1	7-2	118	5-7	91		7.05		21	66
4	6-6	7-2	110	5-7	86		6.00		13	6
5	6-6	6-4	97	5-6	84	6.00				45
6	6-9	5-11	87	5-11	87	6.90	6.00	6.45	5	11
7	6-1	5-9	95			6.64			11	23
8	5-11	7-6	127	5-3	89	6.00	6.70	6.35	12	27
9	6-9					6.00	6.00	6.00		
10	5-11	7-2	120	4-11	83	6.75	6.00	6.38	8	33
11	6-5	6-1	95			6.67	6.00	6.34	19	28
12	6-6	7-4	113	5-9	88	6.00	6.60	6.30	11	43
13	6-4	6-11	109	5-6	86		6.00		0	3
14	6-6	6-3	96	5-5	83		7.15		8	28
15	6-9	6-6	96	5-2	76		6.00		0	0
16	6-3	6-5	103	5-10	93	6.00			15	38
17	6-7	8-1	123			6.00	6.80	6.40	1	
18	5-11	5-6	93	4-3	72	6.00			2	0
19	7-4	6-9	92			7.20	6.70	6.95	27	47
20	5-0	7-8	153	7-2	142		6.00		20	56
21	6-7	7-4	111			7.20	6.70	6.95	21	62
22	6-6	8-6	130			6.60	6.60	6.60	18	36
23	6-6	8-2	125			6.90	6.70	6.80	17	40
24	6-1	7-4	120			6.00	6.00	6.00	7	13
25	7-4	8-5	115			6.00	6.70	6.35	8	15
26	6-6			6-6	99		7.00		15	36
27	6-1	7-5	121	6-6	107	7.60			21	53
28	7-1					6.75	6.90	6.83		
29	7-7	7-4	96	7-0	92	6.80	6.00	6.40	27	42
30	6-10	5-11	87	5-10	85	6.80	6.00	6.40	2	31
31	6-0	7-3	120	5-7	93		6.80		21	40
32	6-8					6.67	7.05	6.86		

P.P.

School 5 (a)	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 1	6-1	7-6	123	7-11	130	6.80	6.90	6.85	12	21
2	7-5	7-8	103	8-2	110	7.55			30	66
3	6-1	6-1	100	7-2	118	7.02	6.00	6.50	14	41
4	7-8	8-1	105			7.45	6.90	7.18	21	28
5	6-3	7-10	125	7-5	118					
6	6-6	8-2	125	9-4	143	7.83			35	62
7	6-8	7-6	112	6-9	101	7.93	6.00	6.97	40	88
8	6-4	7-0	110	8-1	127	8.15	7.05	7.60	27	75
9	6-2	7-10	127	7-9	126	7.87	7.00	7.44	14	43
10	6-7	8-1	123	7-1	120	7.73	6.70	7.22	29	64
11	6-11	8-7	124	7-4	106	7.83	7.30	7.57	17	51
12	6-5	7-10	122	5-9	90	8.00	7.50	7.75	35	74
13	6-7	8-6	129			8.95	7.95	8.45	61	105
14	6-5	6-11	107			7.50	6.80	7.15	15	40
15	6-3	7-6	120	8-11	143	7.45	6.70	7.08	15	38
16	7-1	7-9	109			7.00	6.00	6.50	16	27
17	6-1	7-5	122	7-10	128	7.00	7.00	7.00	20	37
18	6-10	7-5	109	8-3	120	7.35	7.00	7.18	24	51
19	6-0	7-7	126	8-2	136	7.55	6.90	7.23	26	
20	6-8	7-6	112			7.20			38	46
21	7-0	8-7	123	8-6	121	7.60	7.10	7.35	41	68
22	6-0	7-7	126			7.70	6.70	7.20	22	55
23	6-3	7-8	122	9-5	150					
24	6-10	8-8	127	9-9	143	9.25	9.30	9.38	75	124
25	6-4	7-11	125	7-0	110		7.00		15	25
26	6-2	7-4	119	9-1	127	7.05	6.80	6.93	19	33
27	7-1	8-5	119			8.00	7.20	7.60	31	69
28	6-5	7-5	115	8-0	125	6.90			17	23
29	6-10	8-9	128			7.97			46	62
30	7-0	8-9	125			7.83	7.30	7.57	41	74
31	6-0	6-9	112	6-7	110	7.15	7.00	7.08	29	46
32	5-9	7-4	128			7.80			30	61

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	AVE.	Scores DEC.	Scores MAR.
Case 33	5-8	8-5	129			7.83	7.00	7.42	36	87
34	6-4	8-3	130			7.20	6.75	6.98	18	21
35	6-8	8-10	132	6-10	95	7.80	6.75	7.28	29	61
36	6-4	7-4	115			7.60	6.90	7.25	31	57
37	6-5	8-4	129				7.20		36	107
38	5-6	7-3	131			7.40	7.00	7.20		76
39	7-3					9.10	7.85	8.48	46	91
40	6-6						6.75			

	C.A.	K.A. M.A.	I.Q.	Binet M.A.	Binet I.Q	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR
Case 1	6-7	7-5	112	6-9	102	7.50				
2	5-5	5-10	108	6-9	124	8.15			37	83
3	5-8	7-2	127	6-2	109	7.90	6.70	7.30	40	88
4	6-7	7-3	110	6-3	95	7.40			20	47
5	6-10	7-6	109	6-2	90		6.90		30	70
6	6-1			6-10	112	8.10	7.85	7.98	45	78
7	6-0	7-8	127	7-8	126	8.15			49	
8	6-8	8-4	124	8-9	131	7.65			39	
9	6-2	6-10	111		106	7.25	6.75	7.00	29	54
10	5-10	6-7	113	6-8	114	7.73	6.00	6.87	33	78
11	7-7	8-8	114	8-1	107	8.20	7.50	7.85	39	95
12	5-11	6-0	102	5-4	90	8.90	6.00	7.45	33	99
13	6-2	6-11	112	7-7	123					53
14	7-7	8-4	110	7-7	100	7.97	6.80	7.39		67
15	6-3	6-2	98	6-8	107	6.75	6.00	6.38		20
16	6-2	6-4	103	7-9	126		6.80		28	59
17	6-3	7-4	117	6-5	103	7.77	7.10	7.44	40	
18	6-10	8-0	117	7-0	102	7.65	7.00	7.33	33	52
19	6-7	6-11	105	5-5	82				7	7
20	7-2	8-3	115	8-0	110	7.65	7.00	7.33		62
21	6-0	6-2	103	5-11	98	7.55	6.80	7.18	41	84
22	5-6			7-1	128	7.10			26	49
23	6-2	5-7	90			6.70			22	
24	5-9			7-11	138	8.60	6.60	7.60	28	90
25	5-8	7-0	124			7.65	6.00	6.83	27	61
26	4-11			7-8	155	7.83	6.00	6.92	19	89
27	5-7			7-0	125	7.20	6.80	7.00		26
28	6-10	4-9	70	8-3	121	7.73	6.00	6.87		
29	6-6	5-3	81	7-8	118	7.05	6.00	6.53		61
30	6-9	7-2	106			7.40	6.80	7.10	21	51
31	6-3	Below		5-11	95	6.00	6.00	6.00		
32	5-4			7-1	132	7.65	6.00	6.83		59

	C.A.	K.A. M.A.	K.A. I.Q.	Binet M.A.	Binet I.Q.	Gates Reading I	Gates Reading II	Gates Reading AVE.	Scores DEC.	Scores MAR.
Case 33	5-4			7-4	137		6.00			
34	6-8	4-10	72	5-10	88	7.15	6.00	6.58	18	
35	6-5	6-1	95			6.00	6.00	6.00		41
36	5-7			7-2	128	7.90	6.75	7.33	17	78
37	5-4			7-4	137	7.73	7.10	7.42	12	71
38	5-10	5-9	98	7-4	125	7.45				67
39	5-10			7-10	134	8.15			16	84
40	5-5			7-4	135	7.00	6.00	6.50	21	
41	5-6			7-7	137					
42	6-9					8.50	6.00	7.25	29	99
43	5-10			7-7	129	9.05	7.15	8.10	19	95
44	5-10									
45	6-7	5-4	81	7-9	118					
46	6-3	7-0	112	7-9	123	7.10	6.75	6.93		
47	6-3	6-5	103	7-11	126	7.45				
48	5-11	5-10	98	7-5	124					
49	6-5			6-2	93	7.40				
50	6-5	7-5	115			7.60	6.90	7.25		

W.

	Dec. Test 1	Mar. Test 2
Case 1	0	30
2	1	11
3	1	16
4	2	
5	2	20
6	2	6
7	2	6
8	3	5
9	4	52
10	4	20
11	5	19
12	5	6
13	6	
14	6	29
15	7	56
16	7	53
17	7	34
18	8	50
19	8	57
20	8	46
21	9	59
22	9	53
23	10	
24	12	49
25	12	46
26	12	67
27	12	78
28	12	68
29	12	
30	14	57
31	14	75
32	14	37

	Dec. Test 1	Mar. Test 2
Case 33	14	
34	15	82
35	15	63
36	16	
37	16	67
38	16	
39	17	104
40	17	78
41	18	76
42	18	
43	18	77
44	20	
45	21	55
46	22	117
47	23	71
48	23	
49	24	57
50	27	123
51	28	65
52	29	113
53	30	76
54	30	93
55	31	
56	33	83
57	38	51
58	38	68
59	41	120
60	41	74
61	46	91
62		7
63		78

School 6

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